IN RE:
RONALD A. KATZ
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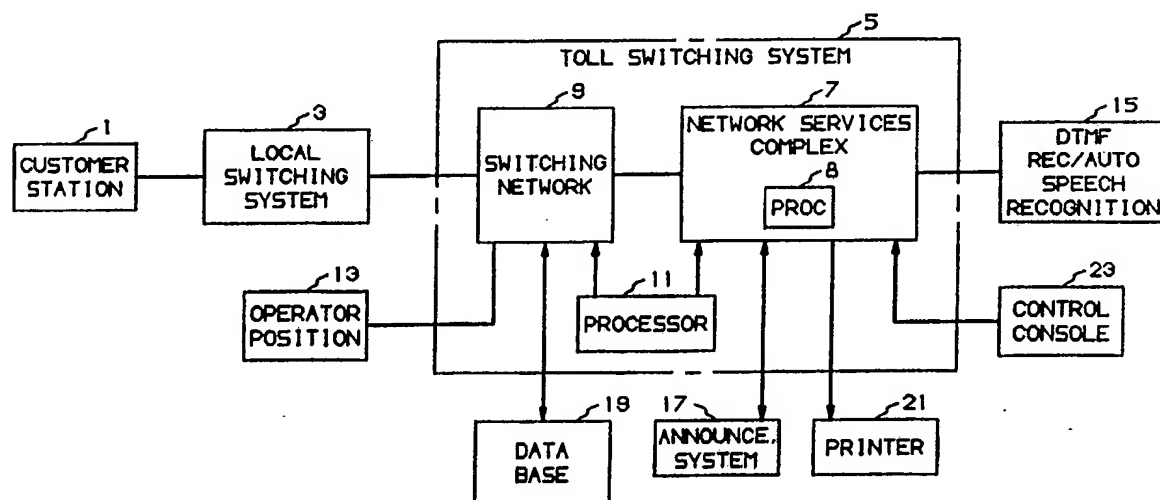

FOREIGN PATENT:

WO 89/02139 PCT

(54) Title: USE OF TELECOMMUNICATIONS SYSTEMS FOR LOTTERIES

(57) Abstract

A lottery system using a public switched network to enter a lottery and to receive an indication of winning while connected on a lottery call. A lottery customer dials a telephone number to enter the lottery. The customer has his eligibility verified by a credit card number or the telephone number of the calling station. The customer is then prompted to speak or key a lottery entry which may be a full number, partial number, or an indication that a lottery comparison number is to be generated by a lottery processor. From the customer's lottery entry, a lottery comparison number is generated. This is compared with a random lottery target number generated by the lottery processor. If the comparison number and target number match, the customer is informed of his winning. Advantageously, lottery customers are quickly notified of their winnings.

USE OF TELECOMMUNICATIONS SYSTEMS FOR LOTTERIES

Technical Field

This invention deals with arrangements and methods for conducting lotteries and more specifically with lottery arrangements and methods using telecommunications systems to communicate between customers and a centralized
5 lottery system.

Problem

State run lotteries have become increasingly popular in the past several decades. In these lotteries, the players typically select a group of numbers from a much larger group of possible numbers and pay for each selection. For
10 example, for each drawing of the lottery, the Illinois State Lottery allows its players to select any two combinations of 6 numbers from 1-44 for a charge of $1.00. The winner(s) of the lottery are the person(s) who have selected all six numbers correctly for that drawing.

Compared with other gambling activities, a lottery has the
15 disadvantage that a selection must generally be made long before results are obtained and announced. For example, the Illinois Lottery "Lotto" game has two drawings per week. A bettor can only purchase tickets at least ten minutes and up to three days before each drawing, and must wait until the drawing to find out whether he has won. Only by entering the lottery at a time close to the time of
20 the twice-weekly drawing can a customer get results in a fairly short time. This is in contrast to other gambling activities, such as a roulette wheel or dice, where the bettor learns results momentarily. A problem of the prior art of lottery systems therefore is that no facilities are available for providing a bettor with mechanized immediate results on his lottery bet, particularly over telecommunications
25 facilities.

Solution

The above problem is solved and an advance is made in lottery systems in accordance with one exemplary embodiment of the invention, wherein a lottery player communicates via a telecommunications link with a centralized
30 lottery administration system, communicates a selection to that system over a telecommunications link, and, in a departure from the prior art, has that selection or a number based on that selection compared with a random number generated in the lottery system while the player is still on line. If the result of the comparison

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indicates a winning lottery entry, the lottery player is informed that the player has won a prize.

Brief Description of the Drawing

The invention can be understood from the following detailed
5   description when read with reference to the drawing in which:

FIG. 1 is a block diagram of a system for practicing the invention; and

FIGS. 2 and 3 are flow diagrams of steps for processing customer lottery calls.

10   Detailed Description

FIG. 1 is a block diagram of a system for providing customer paid lottery or sponsor paid lottery services. A customer at customer station 1 is connected via a local switching system 3 to a toll switching system 5. The local switching system may be, for example, a 1A ESS^{TM} switch, described in "No. 1
15   Electronic Switching System", *Bell System Technical Journal,* Vol. 43, No. 5, pp. 1831-2592, September 1964, and "1A Processor", *Bell System Technical Journal,* Vol. 56, No. 2, pp. 119-315, February 1977. In order to be able to process calls without requiring credit card or equivalent data, it is desirable that the local switching system be capable of identifying the telephone number of a
20   customer and forwarding this number to a toll switching system, i.e., capable of performing the automatic number identification (ANI) function. In this embodiment, the local switching system is connected to a toll switching system which may, for example, be the 4 ESS switch described in "No. 4 ESS", *Bell System Technical Journal,* Vol. 56, No. 7, pp. 1015-1320, September 1977, and
25   "No. 4 ESS", *Bell System Technical Journal,* Vol, 60, No. 6, pp. 1041-1224, July-August 1981. In other embodiments, the functions described herein for the toll switch may be performed by a tandem switching system or the customer's local switching system. In the 4 ESS switch the customer is connected through switching network 9 to a network services complex 7. This connection is set up
30   under the control of a processor system 11. The network services complex has its own processor 8 and is connectable to a voice processing unit 15 comprising a combined dual tone multifrequency (DTMF) receiver/speech recognition unit. The DTMF receiver detects DTMF keyed signals, the speech recognition unit recognizes spoken digits. The network services complex also includes an
35   announcement system 17 for prompting customers and for delivering an

advertising message for sponsor paid lotteries. Data base 19, connected via the switching network 9, is used for maintaining customer eligibility data for a lottery and for accumulating billing data for customers of a customer paid lottery. This data base is accessed prior to accepting a lottery call and and prior to prompting a
5 customer to enter lottery data. The data base can alternatively be accessed via the network services complex 7. A printer 21 is used to record major events, for example, the winning of a prize by a customer. Control console 23 is used to generate and enter control information into control processor 8 for varying the probability of winning a prize, for example, by extending or narrowing the range
10 of target random numbers, and for varying the amount of the payoff, and for controlling these factors for a plurality of lotteries controlled by the same complex.

FIGS. 2 and 3 are flow diagrams of a method of offering both customer paid and sponsor paid lotteries. Action box 50 (FIG. 2) represents the
15 customer dialing a code to access the lottery. This code may be the code of a customer paid lottery or it may be the code of an advertisement. The customer's telephone number is forwarded to the toll switching system using automatic number identification (action box 52). The data base 19 is then used to verify the eligibility of the customer for the specific lottery (action box 54). This eligibility
20 may be based on locale in the case of either a customer paid or a sponsor paid lottery since a customer paid lottery may not be legal in certain areas and a sponsor may not be interested in receiving inquiries from certain areas. Alternatively, a customer could supply a credit card number and eligibility, charges, and winnings could be referred to that credit card account. The data base
25 is used to verify a particular customer's eligibility and to record charges: for the sponsor paid lottery a particular customer may be eligible only for a limited number of chances; for the customer paid lottery it is important to keep a record of how many times a customer has used the lottery to ensure that a prepaid amount or a credit limit is not exceeded. If a sponsor does not demand a
30 limitation on the use of the lottery by a customer, the customer's directory number is not needed and can be obtained in case of a win by an operator attached to the call at that time.

Next, a customer is prompted to key or speak a lottery selection to be used for generating that customer's lottery comparison number (action box 56).
35 This lottery selection can be a full lottery comparison number, a partial lottery

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comparison number, or an indication that the data base is to generate the lottery
comparison number, either specifically or as a default condition. In the case of
sponsor paid lotteries, this prompting may follow earlier announcements in which
the sponsor delivers an advertisement and perhaps seeks marketing information by
5   requesting a customer to speak or key digits or the words "yes" or "no". Such
information would be detected by DTMF receiver/speech recognition unit 15. The
keyed or spoken lottery selection is announced back to the customer (action
box 58). If the customer fails to key or speak a go-ahead signal (test 60 "no"
output) then the customer is reprompted to key or speak the lottery number. If the
10   customer does key or speak a go-ahead signal ("yes" output of test 60) then billing
data is entered for the customer of a customer paid lottery; eligibility data for that
customer is also updated (action box 62) to reflect the fact that the customer has
used the lottery once more. If this is a sponsor paid lottery, eligibility data is
updated to prevent any specific customer from overusing the service. If this is a
15   customer paid lottery entry, the customer is billed (action box 63).

FIG. 3 illustrates one method of determining whether the lottery entry
represents a winning entry. Control processor 8 generates a lottery target random
number (action box 64) which is compared (test 66) with a lottery comparison
number generated (action box 65) from the lottery selection. The lottery target
20   number could also be generated by another processor under the control of the
sponsor or the administrator of a lottery, which telephone number control
processor 8 would then compare with a lottery comparison number. Note that the
customer need not key or speak a full number, although this is an option if
marketing tests show that full number entry is preferred. For example, the
25   customer may key or speak the first four digits of a ten digit random number and
the control processor 8 will generate a random number for the last six digits. The
lottery comparison number generated from the customer's selection data and the
random lottery target number generated by the processor for comparison are
compared in test 66. If there is no match or no near match, the customer is
30   informed (action box 68) through an announcement and the call is disconnected
(action box 69). If there is a match or near match (for example, a match of all
but one number), a record is immediately printed on the printer 21 so that even if
the call for some reason is interrupted a retrievable record is available and the
customer can be called back (action box 70). In the normal situation, the win is
35   then announced to the customer by announcement (action box 72) and the

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customer is connected to an operator (action box 74). The operator records additional customer data supplied by the customer such as the address and name (action box 76) and a verification entry is printed on printer 21 (action box 78) to verify that an operator has recorded this data. The lottery entry can also be

5　arranged to be tried periodically, say, every month. A lottery compairison number is generated (action box 90) and the customer billed (action box 92). The random lottery target number is generated (action box 94) and the comparison made (test 66, previously described.) If the lottery entry is periodic, there is no need to announce the absence of a winning entry to the customer (action box 68). If the

10　customer has won, it is necessary to initiate a call to the customer to announce the win as described with respect to action box 72, since the customer is not connected on a periodic lottery entry.

　　　　　FIG. 2 also illustrates the steps for processing a call generated by a sponsor. Unsolicited computer-generated calls very frequently encounter an

15　almost immediate disconnect by the called customer. In order to induce the customer to hang on, perhaps in order to receive marketing information or to get a customer purchase order, in accordance with the principles of this invention, an announcement is played promising the customer that if the customer does not disconnect, the customer will be given a chance to win a lottery prize. Such a call

20　is generated and the customer number of the call is recorded (action box 90). The sponsor's message is announced to the customer (action box 92). Next, a test is made whether the customer is still connected (test 94). If not, the call is disconnected (action box 86). If the customer is still connected, the telephone number of the customer is forwarded to the supplier of the lottery and the steps

25　from action box 54 on described supra with respect to customer generated calls are performed. Alternatively, the lottery service can be provided directly by the same equipment which is generating the calls and messages to customers as discussed with respect to action box 90 and 92. Alternatively, the system can be used for calls initiated by customers to a sponsor supplied message.

30　　　　　It is to be understood that the above description is only of one preferred embodiment of the invention. Numerous other arrangements may be devised by one skilled in the art without departing from the spirit and scope of the invention. The invention is thus limited only as defined in the accompanying claims.

<u>Claims</u>

1. A method of operating a lottery comprising the steps of:

receiving a lottery entry, comprising a lottery entry selection, from a telecommunications station to a centralized lottery system;

5   generating a lottery target number in said centralized lottery system;

processing said lottery entry selection for matching with said lottery target number to determine if said lottery entry is a winning entry; and

responsive to a determination that said lottery entry is a winning entry, reporting a winning result to said telecommunications station.

10   2. The method of claim 1 wherein said processing step matches for full identity and for partial identity and, responsive to said full identity, said reporting step reports a first predetermined winning amount and, responsive to said partial identity, said reporting step reports a second predetermined winning amount.

15   3. The method of claim 1 wherein said processing step comprises the step of:

generating a lottery comparison number from said lottery entry selection; and

matching said lottery comparison number with said lottery target 20   number.

4. The method of claim 3 wherein said step of generating a lottery comparison number comprises the step of generating a random number based on said lottery entry selection.

5. The method of claim 3 wherein said step of generating a lottery 25   comparison number comprises the step of copying said lottery entry selection for use as said lottery comparison number.

6. The method of claim 1 further comprising the steps of:

identifying said telecommunications station; and

verifying the eligibility of a customer at said telecommunications 30   station to participate in said lottery.

7. The method of claim 1 further comprising the steps of:

identifying said telecommunications station; and

recording billing data for said lottery entry for said telecommunications station.

35   8. The method of claim 1 further comprising the steps of:

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identifying a customer at said telecommunications station; and

verifying the eligibility of said customer to participate in said lottery.

9. The method of claim 1 further comprising the step of:

calling said telecommunications station prior to the step of

5 transmitting a lottery entry, wherein said step of transmitting a lottery entry is enabled if said telecommunications station does not disconnect before a lottery prompt is transmitted to said telecommunications station.

10. A lottery system comprising:

means for receiving signals from a customer telecommunications

10 station, said signals representing data for a lottery entry; and

processing means for determining whether said data for said lottery entry represents a winning entry, comprising:

means for generating a lottery target number, means for processing said data for said lottery entry to form a lottery comparison number, and means

15 for matching said lottery target number and said lottery comparison number.

11. The lottery system of claim 10 further comprising:

means for notifying a customer at said customer station of a winning entry.

12. The system of claim 10, wherein said customer station has an

20 identification code, further comprising:

means for determining an identification code for said customer station; and

data base means responsive to said identification code for verifying eligibility of said customer station to participate in the lottery of said lottery

25 system.

13. The system of claim 10 further comprising:

means for receiving signals representing a credit card identification code from said customer station; and

data base means responsive to said credit card identification code for

30 verifying eligibility of said customer station to participate in the lottery of said lottery system.

14. A method of operating a lottery comprising the steps of:

receiving over a telecommunications network a call from a lottery caller for making a lottery entry;

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determining whether said lottery entry is a winning entry;

alerting said caller of said call of said determination over said network; and

billing said caller for said entry.

5   15. The method of claim 14 wherein said determining and said billing is performed periodically for said lottery entry.
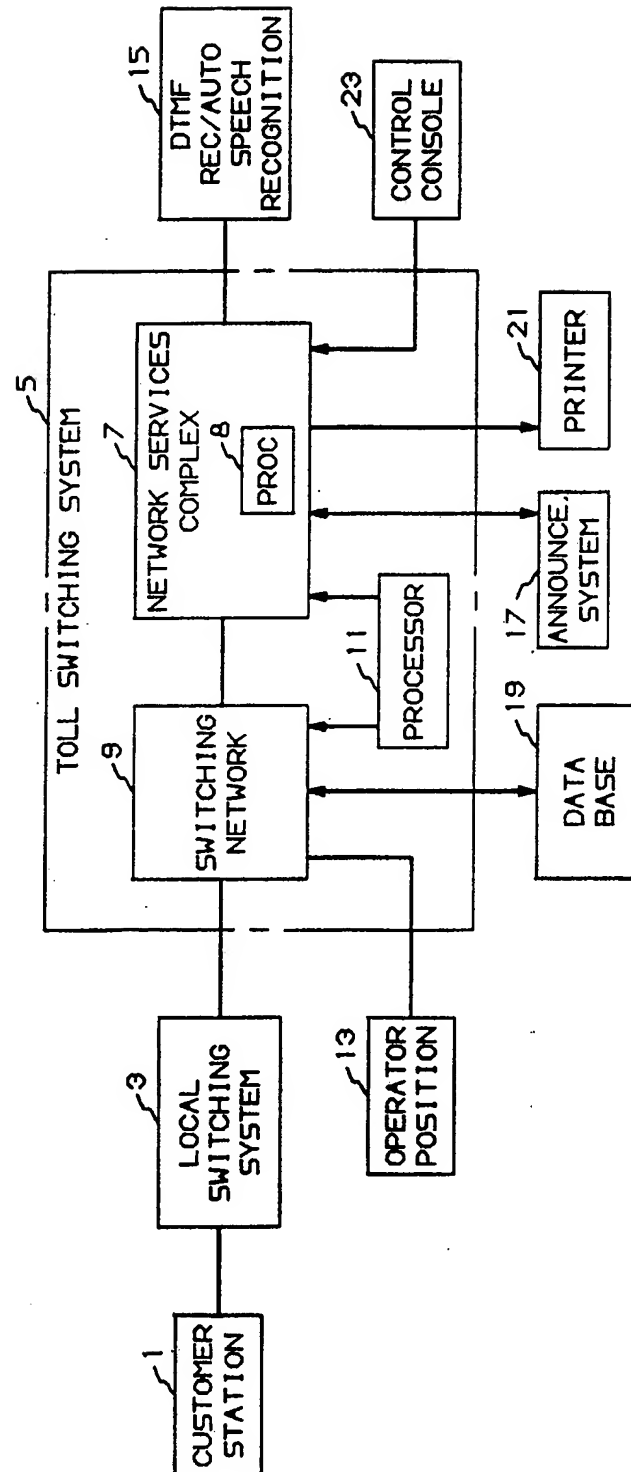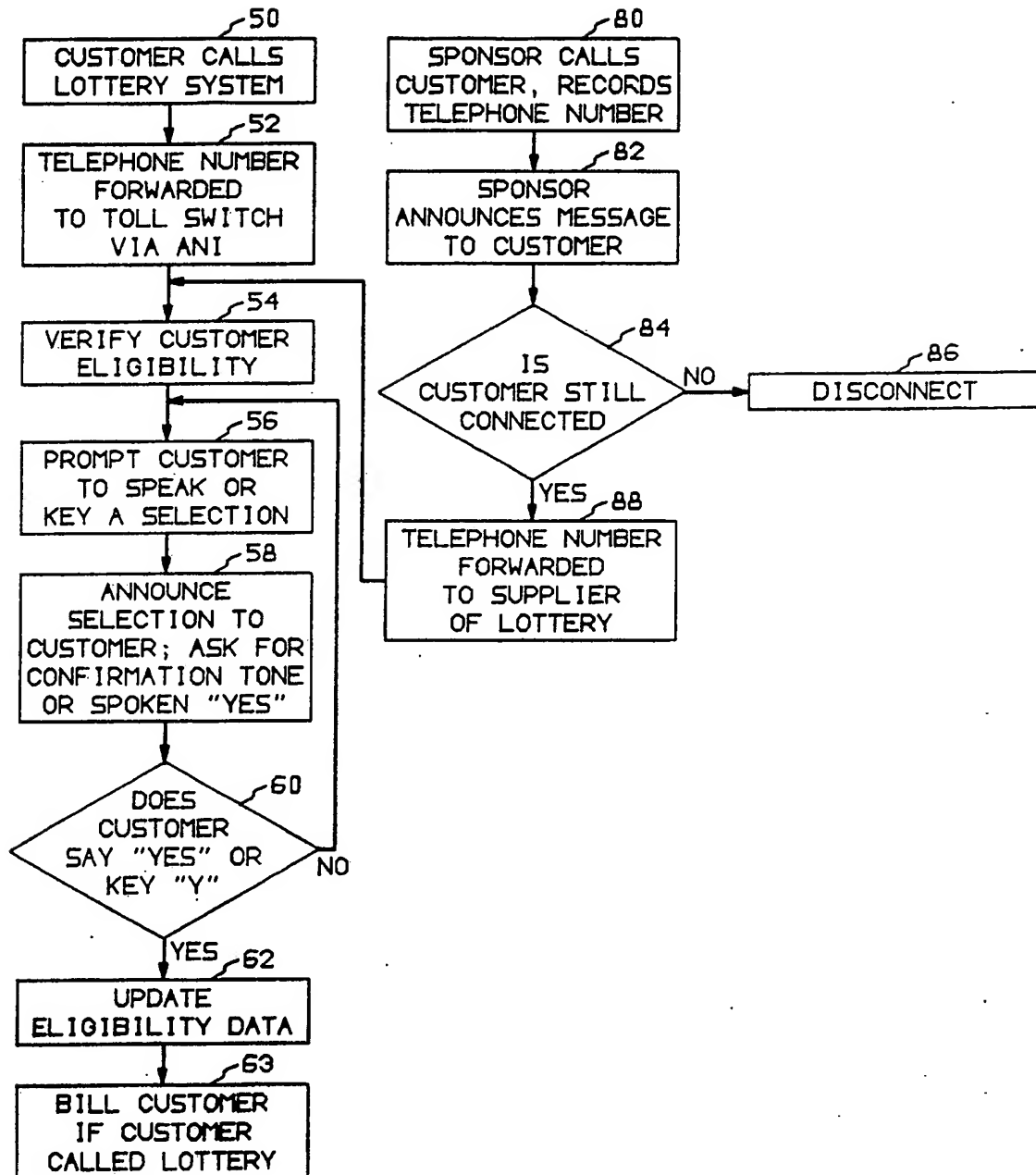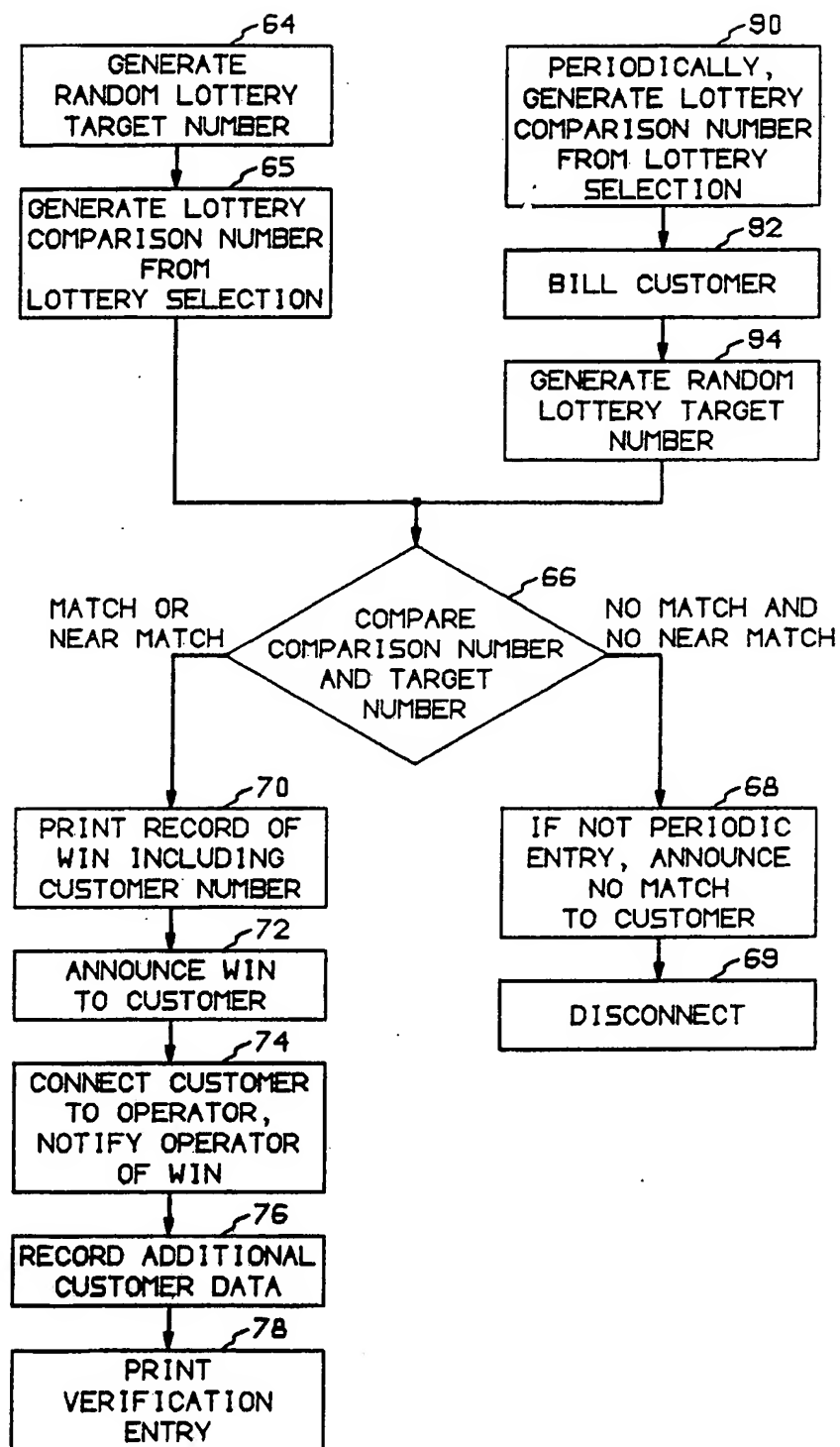
FIG. 1

FIG. 2

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        ┌─────────────────┐ ⌐64          ┌─────────────────────┐ ⌐90
        │    GENERATE     │              │   PERIODICALLY,     │
        │ RANDOM LOTTERY  │              │  GENERATE LOTTERY   │
        │  TARGET NUMBER  │              │ COMPARISON NUMBER   │
        └────────┬────────┘              │   FROM LOTTERY      │
                 │                       │     SELECTION       │
        ┌────────▼────────┐ ⌐65          └──────────┬──────────┘
        │ GENERATE LOTTERY│                         │
        │COMPARISON NUMBER│              ┌───────────▼─────────┐ ⌐92
        │      FROM       │              │    BILL CUSTOMER    │
        │LOTTERY SELECTION│              └───────────┬─────────┘
        └────────┬────────┘                         │
                 │                      ┌────────────▼────────┐ ⌐94
                 │                      │  GENERATE RANDOM    │
                 │                      │  LOTTERY TARGET     │
                 │                      │      NUMBER         │
                 │                      └────────────┬────────┘
                 └──────────────┬────────────────────┘
                                │
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MATCH OR   NO MATCH AND
NEAR MATCH   NO NEAR MATCH

```
              ◇ COMPARE              ⌐66
             ◇  COMPARISON NUMBER  ◇
              ◇  AND TARGET       ◇
                ◇  NUMBER        ◇
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┌──────────────────┐ ⌐70          ┌──────────────────┐ ⌐68
│ PRINT RECORD OF  │              │  IF NOT PERIODIC │
│  WIN INCLUDING   │              │ ENTRY, ANNOUNCE  │
│ CUSTOMER NUMBER  │              │    NO MATCH      │
└────────┬─────────┘              │  TO CUSTOMER     │
         │                        └────────┬─────────┘
┌────────▼─────────┐ ⌐72                   │
│   ANNOUNCE WIN   │              ┌────────▼─────────┐ ⌐69
│   TO CUSTOMER    │              │    DISCONNECT    │
└────────┬─────────┘              └──────────────────┘
         │
┌────────▼─────────┐ ⌐74
│ CONNECT CUSTOMER │
│   TO OPERATOR,   │
│  NOTIFY OPERATOR │
│     OF WIN       │
└────────┬─────────┘
         │
┌────────▼─────────┐ ⌐76
│RECORD ADDITIONAL │
│  CUSTOMER DATA   │
└────────┬─────────┘
         │
┌────────▼─────────┐ ⌐78
│      PRINT       │
│   VERIFICATION   │
│      ENTRY       │
└──────────────────┘
```

FIG. 3

INTERNATIONAL SEARCH REPORT

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) *

According to International Patent Classification (IPC) or to both National Classification and IPC

IPC^4: G 07 C 15/00; G 06 F 15/28; G 07 F 17/32

II. FIELDS SEARCHED

Minimum Documentation Searched 7	
Classification System	Classification Symbols
IPC^4	G 07 C; G 07 F; G 06 F; H 04 M

Documentation Searched other than Minimum Documentation
to the Extent that such Documents are Included in the Fields Searched 8

III. DOCUMENTS CONSIDERED TO BE RELEVANT 9

Category *	Citation of Document, 11 with Indication, where appropriate, of the relevant passages 12	Relevant to Claim No. 13
Y	EP, A, 0032410 (DE BRUYN) 22 July 1981 see abstract; page 4, line 18 - page 7, line 16; claims; figures	1,10,14
A		2,6-8,12, 15
Y	US, A, 4494197 (SEYMOUR et al.) 15 January 1985 see abstract; page 1, line 58 - page 2, line 25 and lines 52-68; page 9, line 43 - page 10, line 7; page 15, line 21 - page 16, line 12; page 18, line 24 - page 19, line 5; claims; figures	1,10,14
A		6,8,11-13
A	FR, A, 2553210 (GOTLIBOWICZ et al.) 12 April 1985 see page 1, line 13 - page 6, line 17; figures	1,6-14
A	GB, A, 2147773 (IGT) 15 May 1985 see abstract; page 1, lines 24-51; page 10, line 58 - page 11, line 55 ./.	1,10,14

* Special categories of cited documents: 10

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the International filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed,

"T" later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

IV. CERTIFICATION

Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report
4th May 1988	0 9 JUN 1988
International Searching Authority	Signature of Authorized Officer
EUROPEAN PATENT OFFICE	P.C.G. VAN DER PUTTEN

Form PCT/ISA/210 (second sheet) (January 1985)

III. DOCUMENTS CONSIDERED TO.BE RELEVANT (CONTINUED FROM THE SECOND SHEET)		
Category *	Citation of Document, with indication, where appropriate. of the relevant passages	Relevant to Claim No
	figures	
	--	
A	GB, A, 2148135 (IGT) 30 May 1985 see abstract; page 1, lines 57-111; claims; figures	1,10,14
	--	
A	Computer, volume 7, no. 10, October 1974, (Long Beach, US), S.L. Dunik: "Large scale off- track betting systems", pages 30-38	

ANNEX TO THE INTERNATIONAL SEARCH REPORT
ON INTERNATIONAL PATENT APPLICATION NO.   US 8703189
SA   20585

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report.
The members are as contained in the European Patent Office EDP file on 31/05/88
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Patent document cited in search report	Publication date	Patent family member(s)		Publication date
EP-A- 0032410	22-07-81	JP-A-	56104565	20-08-81
		AU-A-	6611381	16-07-81
		CA-A-	1162336	14-02-84
US-A- 4494197	15-01-85	US-A-	4689742	25-08-87
FR-A- 2553210	12-04-85	None		
GB-A- 2147773	15-05-85	None		
GB-A- 2148135	30-05-85	None		

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82